

What is claimed is:

1. An isolated polypeptide having the amino acid sequence referenced as SEQ ID NO:2.

5 2. An antibody that specifically binds the polypeptide of claim 1.

3. The antibody of claim 2, wherein said antibody is a polyclonal antibody.

4. The antibody of claim 2, wherein said antibody is a monoclonal antibody.

10 5. A method of detecting a polypeptide, comprising contacting a sample with the antibody of claim 2 and detecting specific binding of said antibody.

15 6. An isolated nucleic acid molecule encoding a polypeptide amino acid sequence referenced as SEQ ID NO:2.

7. The isolated nucleic acid molecule of claim 6, comprising the nucleotide sequence referenced as SEQ ID NO:3.

20 8. An oligonucleotide comprising between 15 and 300 contiguous nucleotides of SEQ ID NO:3 or the anti-sense strand thereof.

9. A vector comprising an expression element operationally linked to the nucleotide sequence of claim 6.

5 10. A host cell comprising the vector of claim 9.

10 11. A method of detecting a nucleic acid molecule in a sample, comprising contacting said sample with an oligonucleotide of claim 8 under conditions allowing specific hybridization to a nucleic acid molecule in said sample and detecting specific hybridization.

15 12. A method of detecting a nucleic acid molecule in a sample, comprising contacting said sample with two or more oligonucleotides of claim 8, amplifying a nucleic acid molecule, and detecting the amplified nucleic acid molecule.

13. The method of claim 12, wherein said amplification is performed using polymerase chain reaction.

20 14. A kit comprising one or more oligonucleotides comprising between 15 and 300 contiguous nucleotides of SEQ ID NO:3, or the anti-sense strand thereof.

15. A method of identifying a candidate drug for treating Parkinson's disease, comprising contacting a parkin binding polypeptide with one or more compounds and identifying a compound that alters the activity of said
5 parkin binding polypeptide.

16. The method of claim 15, wherein said parkin binding polypeptide is selected from synaptotagmin I, synaptotagmin XI, or synpasin-like protein.

17. The method of claim 15, wherein said
10 compound decreases the activity of said parkin binding polypeptide.

18. A method of identifying a candidate drug for treating Parkinson's disease, comprising contacting a cell expressing a parkin binding polypeptide with one or
15 more compounds and identifying a compound that decreases the expression of said parkin binding polypeptide.

19. The method of claim 18, wherein said parkin binding polypeptide is selected from synaptotagmin I, synaptotagmin XI, or synpasin-like protein.

20. A method of treating Parkinsons's disease, comprising administering a molecule that decreases
20 expression or activity of a parkin binding polypeptide.

21. The method of claim 20, wherein said parkin binding polypeptide is selected from synaptotagmin I, synaptotagmin XI, or synpasin-like protein.

5 22. A method of generating an animal model of Parkinson's disease, comprising generating a transgenic animal expressing an increased level of a parkin binding polypeptide.

10 23. The method of claim 22, wherein said parkin binding polypeptide is selected from synaptotagmin I, synaptotagmin XI, or synpasin-like protein.

24. An animal model of Parkinson's disease generated by the method of claim 22.